

Notice of Allowability

Application No.

09/935,757

Examiner

Kathleen M Kerr

Applicant(s)

MOCKEL ET AL.

Art Unit

1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/1/05.
2. ☒ The allowed claim(s) is/are 9, 12, 15, 16, 18, 21, 22, 24-30.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Kathleen M Kerr
Primary Examiner
Art Unit: 1652

DETAILED ACTION

Application Status

1. In response to the previous Office action, a final rejection (mailed on December 16, 2004), Applicants filed an after-final response and amendment received on February 1, 2005. Said amendment cancelled Claims 13 and 23 and amended Claims 15, 16, 29, and 30. Thus, Claims 9, 12, 15, 16, 18, 21, 22, and 24-30 are pending in the instant Office action and will be examined herein.

Priority

2. As previously noted, the instant application is granted the benefit of priority for the foreign applications 10043336.7 and 10126422.4 filed in Germany on September 2, 2000 and May 31, 2001, respectively. Translation of said documents have been received.

As previously noted, the instant application is also granted the benefit of priority for the U.S. Provisional Application No. 60/295,009 filed on June 4, 2001.

Withdrawn - Claim Objections

3. Previous objection to Claim 23 under 37 C.F.R. § 1.75 as being a substantial duplicate of claim 12 is withdrawn by virtue of Applicant's cancellation of said claim.

Withdrawn - Claim Rejections - 35 U.S.C. § 112, second paragraph

4. Previous rejection of Claims 16 and 30 under 35 U.S.C. § 112, second paragraph, is withdrawn by virtue of Applicant's amendment limiting the claims to C. glutamicum host cells thereby clarifying that C. glutamicum genes are to be deleted.

Art Unit: 1652

5. Previous rejection of Claim 23 under 35 U.S.C. § 112, second paragraph, as being indefinite is withdrawn by virtue of Applicant's cancellation of said claim.

Withdrawn - Claim Rejections - 35 U.S.C. § 112, first paragraph

6. Previous rejection of Claim 15 under 35 U.S.C. § 112, first paragraph, written description, is withdrawn by virtue of Applicant's amendment to the lysE gene phrase in conjunction with the approved Examiner's amendment below.

7. Previous rejection of Claim 15 under 35 U.S.C. § 112, first paragraph, scope of enablement, is withdrawn by virtue of Applicant's amendment to the lysE gene phrase in conjunction with the approved Examiner's amendment below.

EXAMINER'S AMENDMENT

8. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Thomas Cawley on February 8, 2005.

Amendments to the Claims

9. The claims have been amended as follows:

a) Rewrite Claims 15-16 as follows:

---15. The process according to claim 9, further comprising overexpressing at least one *C. glutamicum* gene selected from the group consisting of:

- a) the dapA gene which codes for dihydrodipicolinate synthase,
- b) the gap gene which codes for glyceraldehyde 3-phosphate dehydrogenase,
- c) the tpi gene which codes for triose phosphate isomerase,
- d) the pgk gene which codes for 3-phosphoglycerate kinase,
- e) the zwf gene which codes for glucose 6-phosphate dehydrogenase,
- f) the pyc gene which codes for pyruvate carboxylase,
- g) the mqo gene which codes for malate-quinone oxidoreductase,
- h) the lysC gene which codes for feed-back resistant aspartate kinase,
- i) the lysE gene which codes for a protein that exports lysine,
- j) the hom gene which codes for homoserine dehydrogenase,
- k) the ilvA gene which codes for threonine dehydratase or the ilvA(Fbr) allele which codes for feed-back resistant threonine dehydratase,
- l) the ilvBN gene which code for acetohydroxy-acid synthase, and
- m) the ilvD gene which codes for dihydroxy-acid dehydratase.

16. The process according to claim 9 wherein the coryneform bacterium is *C. glutamicum*, the process further comprising deleting at least one *C. glutamicum* gene selected from the group consisting of:

- a) the pck gene which codes for phosphoenol pyruvate carboxykinase,
- b) the pgi gene which codes for glucose 6-phosphate isomerase, and
- c) the poxB gene which codes for pyruvate oxidase.---

Art Unit: 1652

b) Rewrite Claims 29-30 as follows:

---29. The process according to claim 24, further comprising overexpressing at least one *C. glutamicum* gene selected from the group consisting of:

- a) the dapA gene which codes for dihydrodipicolinate synthase,
- b) the gap gene which codes for glyceraldehyde 3-phosphate dehydrogenase,
- c) the tpi gene which codes for triose phosphate isomerase,
- d) the pgk gene which codes for 3-phosphoglycerate kinase,
- e) the zwf gene which codes for glucose 6-phosphate dehydrogenase,
- f) the pyc gene which codes for pyruvate carboxylase,
- g) the mqo gene which codes for malate-quinone oxidoreductase,
- h) the lysC gene which codes for feed-back resistant aspartate kinase,
- i) the lysE gene which codes for a protein that exports lysine,
- j) the hom gene which codes for homoserine dehydrogenase,
- k) the ilvA gene which codes for threonine dehydratase or the ilvA(Fbr) allele which codes for feed-back resistant threonine dehydratase,
- l) the ilvBN gene which code for acetohydroxy-acid synthase, and
- m) the ilvD gene which codes for dihydroxy-acid dehydratase.

30. The process according to claim 24 wherein the coryneform bacterium is *C. glutamicum*, the process further comprising deleting at least one *C. glutamicum* gene selected from the group consisting of:

- a) the pck gene which codes for phosphoenol pyruvate carboxykinase,
- b) the pgi gene which codes for glucose 6-phosphate isomerase, and
- c) the poxB gene which codes for pyruvate oxidase.---

Art Unit: 1652

Other Art of Note

10. The following is cited to complete the record:
- a) Nakagawa *et al.* (USPAP 2002/0197605) (not prior art based on the filing date of December 18, 2000, which does **not** pre-date the foreign priority documents of the instant application, specifically DE 10043336.7 that teaches the claimed invention as evidenced by the certified translations filed) teach methods of producing amino acids using transformants overexpressing all of the disclosed open reading frames therein and isolating said amino acids. One of the open reading frames taught by Nakagawa *et al.* encodes SEQ ID NO:2 of the instant application and is described as similar to sigE of *M. smegmatis*.

Reasons for Allowance

11. The following is an examiner's statement of reasons for allowance. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

The claimed methods are free of the prior art for the reasons of record. The Examiner's amendment above clarifies the genes to be used as intended in the specification on pages 12-14, wherein all the noted sources of genes are *Corynebacterium glutamicum* as required for Claims 15-16 and 29-30. Thus, the specific names added by the Examiner particularly indicate those genes described in the specification. These claims better reflect Applicant's originally filed claims.

Conclusion

12. Claims 9, 12, 15, 16, 18, 21, 22, and 24-30 are allowed.

Art Unit: 1652

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen M Kerr whose telephone number is (571) 272-0931.

The examiner can normally be reached on Monday through Friday, from 9:00am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathupura Achutamurthy can be reached on (571) 272-0928. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kathleen M Kerr
Primary Examiner
Art Unit 1652

February 8, 2005